1921

Diary for 03 01 to 03 27, 1921 with Lesson Notes

Willis Carter

There are four kinds of courses,
a) True course which is the ∠ between the ships track and the geographical north point.
B) The magnetic course which is the ∠ between the ships track and the magnetic north point.
c) The compass course, which is the ∠ between the ships track and the north point as shown by the compass.
d) The steering course, which is the ∠ ships track and the north point of the compass after allowing for leeway or current or both.

2. Variation is the correction to a course to offset the magnetic effect of the earth upon the compass.

3. Deviation is the correction to a course to offset the magnetic effect upon the compass of the ship and cargo.

4. Leeway is the correction to a course to offset the push of the wind.

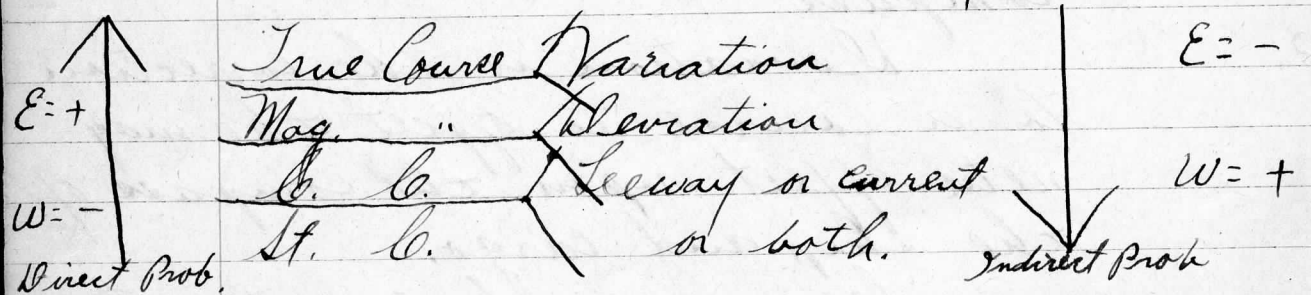
5. Current is the correction to a course to offset the push of the current.

Note. These four corrections are always given as east or west.

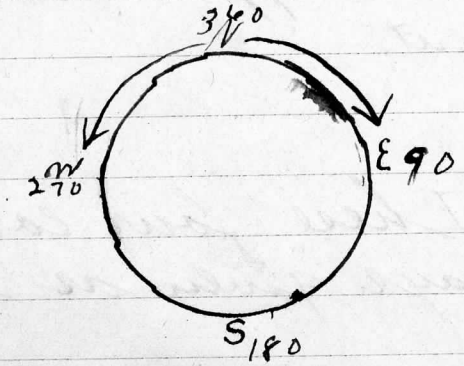
St. C.	85°		
Var.	7° E	7° E	85°
Dev.	4° W	+ 5° E	+ 8°
Leew.	5° (E)	12° E	93° True Course
Wind	West	− 4° W	
		8° E	

St. C.	190°		
Var.	6° W		
Dev.	5° E	5° E	190°
Leew.	4° (E)	+ 4° E	+ 3°
W	So. East	9° E	193° T. C.
		− 6° W	
		3° E	

St. C.	285°		
Var.	8° W	8° W	
Dev.	3° E	+ 4° W	285°
Leew.	4° (W)	12° W	− 9°
W	N	− 3° E	276° T. C.
		9° W	



If the wind is on the Starboard side the leeway is always west. If on the port side, the leeway is always east.



~~W~~ C	110°	Find ~~St~~ M. C.	
Var.	7° E	4° E	110°
Dev.	4° E	2° W	+ 2°
Leew.	2° (W)	2° E	112° ans.
W	S		

reckon → so it is d only een . + M.C.

Find St. C.

M C	110°		
Var	7° E		110°
Dev.	4° E	4° E	− 2°
Leew.	2° (W)	2° W	108° Ans
Wind	S.	2° E	

Find St. C.

M C.	So. E	135°	4° W
Var.		6° E	2° W
Dev.		4° W	6° W
Leew.		2° W	135°
wind		S.	141° ans.

Find M. C.

C. C.	168°		
Var.	7° W	168°	
Dev.	5° E	5°	
Leew.	3° (E)	173°	
W	E		

Find J C

St. C.	S. W.	225°	
Var		8° W	4° E
Dev.		6° E	6° E
Leew		4° E	10° E
W		S	− 8° W
			2° E
			225°
			227° ans.

								Lat.		Diff.	
St. C.	Var.	Dev.	Leew.	Wind	Tot. Cor	T. C.	Dist	N	S	E	W
S SE	4°W	7°W	2W	SW	13W	144°30'	47°		38	27.6	
S	5°W	6°E	3E	SE	4E	184°	63		62.8		4.4
S, SW	6W	5E	4W	W	5W	197°30'	5-9		56.4		17.2
W	7W	4E	1W	NW	4W	246	38		2.7		37.9
175°	4E	3W	2E	E	3E	178	46		46.0	1.6	
355°	7E	4W	3	W	6E	1°	35-	35.0		0.6	
								35-	205.9 33.0	29.8	59.5- 29.8
									170.9 S		29.7W

4

Logarithms.

There are two parts to a logarithm: the index and the mantissa.

The index is that part of the number to the left of the decimal point. The mantissa is at the right of the decimal point.

Rules for Handling logarithms.

Laws of Indices.

1) a) To pass from a number to a logarithm, count the number of figures on the left of the decimal point in the number and subtract 1. The remainder is the index of a logarithm.

2) b) To pass from a logarithm to a number, add 1 to the index and point off this many figures from the left.

Laws of Operation.

1) To multiply numbers, add their logarithms.

2) To divide numbers, subtract their logarithms.

See Laws of Index (a)

48930	= 4.6895-8	(To show how to find indexes)
4893	= 3.6895-8	
489.3	= 2.6895-8	
48.93	= 1.6895-8	
4.893	= 0.6895-8	
.4893	= 9.6895-8	
.04893	= 8.6895-8	
.004893	= 7.6895-8	

1.. $48.3 \times 6.482 \times .124$

Log. of 48.3 = 1.68395

" " 6.482 = 0.81171

" " .124 = 9.09342

" " Sum = ~~2.58908~~ 1.58908

∴ No. = 38.82 (Law of Indep (2))

2.. $\frac{784 \times 3.403}{148.3}$

784 = 2.89432

3.403 = 0.53186

3.42618 (Law of Op. 1)

148.3 = 2.17114

Log. of diff. = 1.25504

∴ No = 17.99

3.. $\frac{.4099 \times 284}{.00743 \times 5.450}$

.4099 = 9.61268

284. = 2.45332

2.06600

.00743 = 7.87099

5.450.00 = 3.73640

1.60739

2.06600

1.60739

.45861 (By Law of Op. 2)

∴ No. = 2.875

4. $\frac{73.26 \times .07326 \times 7.3620}{4.37 \times .000326 \times 3.6270}$

73.26 =	1.86487	
.07326 =	8.86487	
7.3620 =	0.86700	
	1.59674	1.59674
4.37 =	0.64048	7.71325
.000326 =	6.51322	3.88349
3.6270 =	0.55955	
	7.71325	

∴ No = 7647

Plane Sailing.

Plane sailing is the art of navigating a ship on the supposition that the earths surface is a plane. In this sailing there are four parts, viz; Course, distance, difference in latitude, and departure.

The true course is the angle which the ships track makes with the geographical north point.

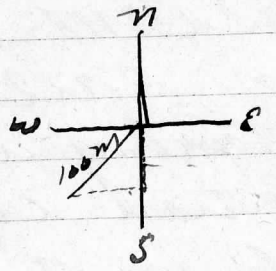
The distance is the length of a ships track when she sails on a direct course a given time from one place to another.

The difference in latitude is the distance the ship makes in a north or south direction from one place to another and is reckoned on a meridian.

Departure is true east or west distance in nautical miles that a ship makes when she sails on an oblique course.

Rule 1.. Sin C (Sin ∠ Course) = Dep. ÷ Dist.
" 2.. Co Sin C = D L ÷ Dist
" 3.. Tangent C = Dep. ÷ D. L.
" 4.. Co Tan C = D L ÷ Dep.
" 5.. Sec C = Dist. ÷ D L
" 6.. Co sec C = Dist. ÷ Dep.

Navigation △



Problems

Dist. 203 S.W.
D.L. 98 W
Find Course & departure.
By Rule 2 Log Co Sin C = D L ÷ Dist
D L = 1.99123
Dist = 2.30750
Log Cos C 9.68373 (Law of op. 2).
C = 61° 8'
Dep. = Dist + Co Sin C
log dist = 2.30750
log Cos C = 9.68338
2.24988
∴ 171.8 = Dep.

765 mi So E Dep 284 mi.
Find C + D L.

Log Sin C = log Dep - log dist

log 284 = 2.45332
log 765 = 2.88366
log Sin C = 9.56966 = 21°48'(C)

D L = log dist + log cos C

log dist = 2.88366
log cos C = 9.96788
D L = 2.85154 = 710.3

S ship makes westing 37 mi. & Northing 54 m.
Find C & Dist.

log tan C = log dep - log D L

log dep = 1.56820
" D L = 1.73239
" tan C = 9.83581 = 34°25° (C)

Log Dist = log dep - log sin C.

log dep = 1.56820
" sin C = 9.75229
Log Dist = 1.81599 = 65.46 mi.

Parallel Sailing.

The D L is the distance north or south in nautical miles or minutes of arc. [(')]

The Departure is the distance east or west in nautical miles.

Rule (1) The D Lon in minutes of arc equals Dep in nautical miles × Secant of the latitude; or,

(2) The Dep. in nautical miles equals D Lon in (') × Cos of Lat.

1. Ship sails due E 87 mi in lat. 59° 30'. Left lon. 144° 17' 30". Find lon. arrived at.

By Rule 1

log of 87 mi = 1.9395 - 2
∴ Sec of lat (59° 30') = 10.2945 - 3
2.2340 -

∴ D L = 171.4 (') = 2° 51' 24"

144° 17' 30"
2° 51' 24"
141° 26' 6" = lon. arrived at.

2. Ship lat. 49° 30' sails due E until she makes D lon 3° 30'. Find Dep.

Dep. = D Lon (') × Cos of Lat
log of D Lon = 2.32222
∴ Cos lat = 9.81254
log Dep = 2.13476
Dep = ~~130.4~~
136.4

3. Ship in lat. 38° sails due W $215\frac{1}{2}$ mi. Find D lon

D lon' = Dep × sec lat

log Dep = 3.333450

∴ sec lat = 0.103447

Log D lon = 3.436892

∴ 273.5 mi = 4° 33' 80'

4. Ship in lat 48° 19' 10" sails from Brest light due W till she arrives in 25° 13' W lon. Find Dep.

-March- 1921-

Tues. Mar. 1 - Cloudy, moderate. Roads very muddy, hard wheeling. "We" fixed the stove-pipe this fore-noon - I hauled two loads of pulp-wood this after-noon.-

Wed. -2 - Pleasant. - I hauled 3 loads of wood.

Thurs. -3 - Rained all day.

Fri. - 4 - Pleasant, windy, cold. - I helped "fix up" in the pantry and papered the ceiling - Roy came up this evening

Sat. - 5 - Pleasaint. Cleaned and papered the pantry. Ernest and family called towards night.

Sun. -6 Rained part of fore-noon. - Clara and I went down to the Church but there was no service.

Mon. -7 Snowed part of the fore-noon. Pleasant this evening. I did a little work to the church, etc.

Tues. - 8 Cloudy. Commenced to rain before noon. - I cut bushes in the pasture most of the fore-noon -

Wed. - 9 Showery - We cleaned, papered and painted in the dairy.

Thurs. - 10 Pleasant. - I churned. Cut bushes in the pasture I went to the Grange this evening. - Clara went to the Ladies Aid - Geo. Bosworth sprained his ankle over to the Holland Place.

Fri. - 11 - Pleasant - I painted in the pantry and dairy; cut bushes.

Sat. - 12 - Fair, warm, cloudy. - I painted; cut bushes in the pasture Roy came up to-night.

Sun. - 13 Pleasant. - Clara and I went to Church - Clara called down

-March- 1921-

Mar.
Mon. - 14 - Fair. - I hauled two loads of wood from Fred Carter's this fore-noon. Cut bushes. Ernest and Mertie called this after-noon; Ernest stayed to supper. -

Tues. 15 - Snowed part of last night and part of to-day. Drizzly. Wet. I painted some. - This after-noon Clara and I went over to Mr. Abenethy's to a meeting of Church Officials. - Ernest and Mertie went to Eastport by Auto. with John Farley. They got their dinner here.

Wed. 16 - Rainy and wet about all day. - I painted; went to the station and met Nina and the boys who will stay up a few days. - Ernest went to Machias port to a ball game - Dennysville High vs E-port high. Mertie and Alicia came down and will stay all night. -

Thurs. 17 - Fair. - I hauled two loads of wood home. - Cut bushes. Mertie and Alicia went up to Mr. Sprague's this morning. Nina went up to Mr. Sprague's this after-noon and stayed to supper. - Clara went to the Ladies' Aid 'Bell' Brown'

Fri. 18 - Pleasant, windy, cold. - I hauled two loads of wood. Cut bushes. - Mrs. Ida Fisher, Mrs. Ethel Stanhope and little girl, and Rhoda and Johnny were here and spent the evening.

Sat. 19 - Fair, cool - I hauled one load of wood and carried Nina and the boys to the station this fore-noon. Went to the Corner this after-noon.

Sun. 20 - Snowed, hailed, rained last night. Rainy about all day. Clara and I went to church - Grosie built the fire. - I went up to Mr. Sprague's a while this after-noon. Ernest, Mertie and Alicia came down a while

-March-1921-

Mon. Mar. 21 - Fair, very warm. - I cut bushes this after-noon. Ernest white-washed the kitchen ceiling. Clara went down to Mr. Welches and got paper to paper the kitchen.

Tues. 22 - Fair, moderate. - I helped Clara paper in the kitchen. Ernest was here to dinner and supper. Mertie called.

Wed. 23 - Pleasant. - I hauled two loads of wood this fore-noon. - Helped paper the kitchen this after-noon. Ernest was here to dinner and supper; Mertie and Alicia were to supper. - Gussie set his incubator

Thurs. 24 - Pleasant. - I hauled two loads of wood this fore-noon. - Cut bushes this after-noon. I went down to the Grange this evening. - Susan Smith came down this fore-noon. Ernest, Mertie and Alicia went down to Nina's with Mr. Sprague's team. -

Fri. 25 - Rained and blowed hard about all day. I went down town a while this after-noon. Roy came up this evening. I churned this fore-noon

Sat. 26 - ~~Easter Sunday~~ Fair - Went to the Corner this fore-noon. Cut bushes this after-noon. - Lewes came home from Auburn for two weeks vacation. - Roy came up this evening.

Sun. 27 - Easter Sunday. - Fair, moderate. - Clara's birthday - Lewis and I went to church this fore-noon. Ernest and family came up from Perry this fore-noon. They came down here towards night and stayed to supper.

Mon. 28 - Cloudy, moderate, looks much like rain - Town Meeting - I went to Town Meeting.